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Microsoft® Private Cloud Fast Track

What Is Microsoft Private Cloud Fast Track?

MICROSOFT PRIVATE CLOUD FAST TRACK is a reference architecture for building private clouds that combines Microsoft software, consolidated guidance, and validated configurations with Nimble Storage technology—including compute, network, and storage—as well as value-added software components.

The latest reference architecture is built on the Windows Server 2012 Hyper-V technology and Microsoft System Center solutions. Microsoft private cloud offerings can help customers and service providers build dedicated infrastructure as a service (IaaS) environments that transform the way they deliver IT services. Specifically, Microsoft Private Cloud Fast Track solutions provide a streamlined approach to delivering scalable, preconfigured, and validated infrastructure platforms for on-premises private cloud implementations. With local control over data and operations, IT can dynamically pool, allocate, secure, and manage resources for agile IaaS. Likewise, business units can deploy line-of-business applications with speed and consistency using self-provisioning (and decommissioning) and automated data center services in a virtualized environment.

PRIVATE CLOUD ON YOUR TERMS

FASTER DEPLOYMENT

Rich features and support make private clouds easy to construct, deploy, and manage.

- End-to-end architectural and deployment guidance
- Streamlined infrastructure planning due to predefined capacity
- Enhanced functionality and automation through deep knowledge of infrastructure
- Integrated management for virtual machine and infrastructure deployment

REDUCED RISK

Validated configurations mean you can implement with confidence.

- Tested, end-to-end interoperability for compute, storage, and network
- Predefined, out-of-box solutions based on a common cloud architecture
- High degree of service availability through automated load balancing

NIMBLE STORAGE ADVANTAGE

Flash-optimized hybrid Nimble Storage arrays are engineered from the ground up for maximum efficiency for private cloud deployments—large and small.

- Accelerate application performance with higher throughput/IOPS and sub-millisecond latencies
- Benefit from measureable storage efficiency by reducing your storage footprint by 30 to 75 percent versus traditional storage
- Maximize data and storage availability with integrated data protection and disaster recovery with no added licensing
- Take advantage of non-disruptive scale to fit changing application needs by independently scaling performance, capacity, or both
- Simplify storage management tasks by using push button simple provisioning and by eliminating the need for manual configuration and tuning
- Reduce risk in deploying a private cloud and keep it running smoothly with proactive support and detailed reporting

Microsoft, Nimble Storage, and Cisco deliver on the promise of agile private cloud computing through a validated, interoperable hardware and software platform based on standardized reference architecture. A private cloud from Nimble Storage can greatly reduce time-to-value for virtualization infrastructure investments because it unites shared compute, network, and storage resources into a flexible, cost-effective solution based on off-the-shelf components. Microsoft Private Cloud Fast Track solutions provide a highly productive application and service experience by delivering workloads faster, keeping them up and running more reliably, and ultimately enabling more predictable service level agreements. Windows Server 2012 offers flexibility to build infrastructure across premises on an open, scalable, and elastic web and application platform to support your workloads. The reference architecture defines a common set of requirements to help IT consolidate hardware platforms into an environment that is more manageable, better used, and less consumptive.

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Why Nimble Storage and Cisco UCS?

The Nimble Storage SmartStack for Windows Server with Cisco and Microsoft can help to simplify and accelerate the journey to the virtual data center. Nimble Storage and Cisco deliver a solid storage and compute foundation for a Microsoft private cloud. The flash-optimized hybrid Nimble Storage combines excellent performance, measureable efficiency, and integrated data management into a cost-effective and easy-to-use storage platform. The leading-edge Cisco Unified Computing System (UCS) platform consolidates compute and networking functionalities into a flexible, high-density solution.

When the SmartStack solution is combined with Windows Server 2012 Hyper-V, IT organizations can deliver IT services and applications more efficiently and cost effectively. The SmartStack solution lets you ease into the virtual data center, enhancing your current environment and scaling as your needs change.

COMPUTE: Cisco UCS delivers state-of-the-art enterprise computing resources with the UCS platform. This server platform is designed for virtualized environments.

- Combine compute, network, storage connectivity, and virtualization into a single, cohesive system and automate server and application deployments by using policy-based service profile templates in Cisco UCS Manager.
- Eliminate manual integration and configuration, reduce total cost of ownership (TCO), and dramatically increase business agility.

STORAGE: The flash-optimized hybrid architecture from Nimble Storage delivers both storage performance and efficiency, eliminating the trade-offs of traditional storage platforms. The scalable CS-Series meets the storage and availability requirements for Windows Server-based private cloud environments.

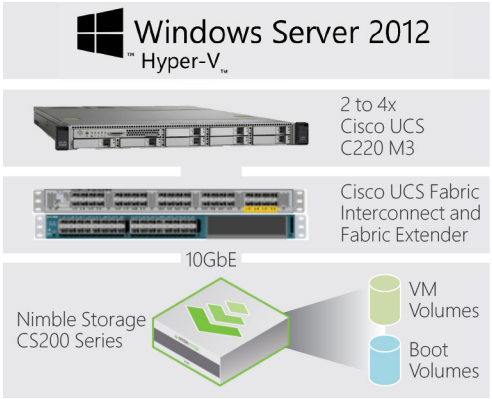
- Accelerate applications and flexibly scale: Improve responsiveness of critical applications and scale to fit with Nimble Storage CS-Series, which delivers excellent performance at sub-millisecond latencies for virtualized workloads in the private cloud.
- Get efficiency you can measure: Control and reduce costs by storing data in less space—30 to 70 percent less than traditional storage platforms—with a range of features, such as in-line compression, zero-copy cloning, and thin provisioning.
- Improve availability without the overhead: Keep data protected and virtualized applications running smoothly with non-disruptive upgrades, hardware redundancy, and high-performance dual parity RAID, as well as native instant redirect on write snapshots and efficient replication.

NETWORK: Cisco is known for being a leader in Ethernet connectivity. The Cisco UCS integrates computing resources with 10 GbE networking infrastructure for storage and application networking. The Cisco Nexus switches optionally can help to scale the capabilities of the UCS Fabric Extender and Fabric Interconnect infrastructure for greater scalability and easier management.

- Greatly simplify network management and reduce costs by consolidating traffic onto a single high-performance, highly available 10 GbE network.
- Take advantage of the integration of computing resources by using the Cisco UCS Fabric Extender, Fabric Interconnect, and optionally the Cisco Nexus switches to provide an intelligent method for identifying and handling different types of network traffic.

MANAGEMENT: The solution takes advantage of System Center 2012 capabilities through the use of Cisco UCS management packs, which enable the comprehensive management and automation of compute and networking workflows across cloud infrastructures.

- Benefit from comprehensive infrastructure management controlled by Windows PowerShell with Cisco UCS PowerTool, a user-friendly UCS management tool based on a command-line interface.
- Use Cisco UCS PowerTool to more easily tie together the management of storage components, compute components, and software applications into a custom, end-to-end management solution that is easy to use and easy to script.

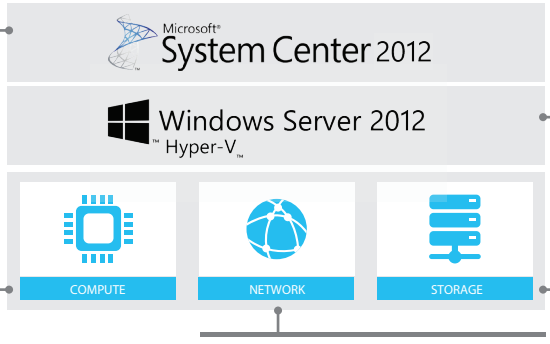


Private Cloud Fast Track Reference Architecture

The Nimble Storage Business-Ready Configuration is pre-engineered, tested, and optimized for virtualization. It supports the operating system, virtualization (compute, storage, and networking), and management capabilities offered by Windows Server 2012, Hyper-V, and System Center 2012 SP1.

Microsoft System Center 2012 SP1 (optional): Organizations can realize the benefits of cloud computing by providing a common toolset for the management of physical and virtual resources and cloud-hosted apps, whether they are deployed in public, private, or partner-hosted cloud environments.

Compute: The server fabric consists of similarly configured, swappable server blades that can be replaced for upgrades, repair, and capacity changes. Automated load balancing limits service interruption.



Network: Networking is virtualized, consolidated, and automated. It supports advanced multitenant isolation and connectivity to public clouds, allowing organizations to take full advantage of hybrid IT.

Windows Server 2012 Hyper-V: Customers can take advantage of the cost savings of virtualization through the massive scale capabilities of Windows Server 2012 Hyper-V. They also can make optimal use of server hardware investments by consolidating multiple server roles as separate virtual machines.

Storage: Storage Spaces provides a complete storage virtualization solution. It supports aggregation and elastic capacity expansion, building virtual disks from storage pools of capacity, and thin provisioning with full TRIM support. Other storage deployments also can be validated for Private Cloud Fast Track reference architectures, according to customer requirements.

Private Cloud Technologies

Windows Server 2012 Hyper-V

Windows Server 2012 Hyper-V delivers massive scale capabilities and improved performance—in the data center, on the desktop, and now in the cloud. This technology:

- Offers customers significant cost savings through virtualization.
- Improves virtualization density and makes optimal use of server hardware investments by consolidating multiple server roles as separate virtual machines. These virtual machines can use Hyper-V to efficiently run multiple operating systems—Microsoft Windows, Linux, and others—in parallel, on a single server.
- Extends virtualization capabilities with more features, greater scalability, and built-in reliability mechanisms.

Microsoft System Center 2012

A cloud and data center management solution, Microsoft System Center 2012 SP1 builds on the core capability provided by Windows Server 2012. It delivers a flexible, cost-effective private cloud infrastructure in a self-service model, while using existing data center hardware and software investments. This solution:

- Provides a common management experience across public, private, and partner-hosted clouds.
- Provides comprehensive, end-to-end management for infrastructure and applications, including interoperability for heterogeneous environments.
- Offers deep application insight—down to client script performance—to deliver an optimal experience for modern applications across diverse devices.
- Delivers tools and capabilities to negotiate challenges surrounding the explosive growth of data from social networking and new application patterns. These features also enable organizations to scale application capacity and, where necessary, to take advantage of public cloud resources.

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Nimble Storage CS-Series and Cisco UCS provide leading-edge components and expertise to deliver a prevalidated, best-in-class solution that interoperates with Microsoft private cloud infrastructure:

- Cisco Unified Computing System C-Series and B-Series servers
- Flash-optimized hybrid Nimble Storage CS-Series

CISCO UCS C-SERIES RACK MOUNT SYSTEMS:

- Unified compute and networking configurations for delivering the performance and connection required by private cloud environments.
- Architecture that supports high availability, including failover clusters.
- Flexible 10 GbE networking for storage and application needs.

NIMBLE STORAGE CS200 SERIES:

- Shared storage array that capitalizes on the performance of flash with the cost efficiency and storage capacity of dense hard disks for optimized access by virtual hosts.
- Integrated backup and recovery, including WAN-efficient replication to eliminate tax on servers, backup windows, and network traffic needed for disaster recovery.
- Intuitive management stack, proactive support capabilities, and reporting/planning tools to ensure an excellent IT experience with storage.
- All-inclusive product with no hidden fees or licenses.

FOR MORE INFORMATION:

- http://www.microsoft.com/privatecloud
- http://www.nimblestorage.com/solutions/microsoft-applications.php
- http://www.cisco.com/go/microsoft